IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Vincent M G Alliot et al.
Serial No 10/523,747
Filed June 20, 2005 TC/AU 3726
For "Method and Apparatus for Examiner: Omgba, Essama
Interconnecting Lined Pipes

DECLARATION OF JEAN-FRANCOIS SAINT-MARCOUX

I, Jean-François SAINT-MARCOUX, declare as follows:

1. I have a bachelor-equivalent diploma in mechanical engineering from the École Centrale de Lyon, a Master's of Science degree in Mechanical Engineering from the California Institute of Technology, Pasadena and the degree of Docteur-Ingénieur from Pierre & Marie Curie University, Paris. A more detailed curriculum vitae is attached as Annex 1.

2. I have over 30 years experience in the offshore oil and gas industry. I am currently Corporate Technology Development Manager of the Acergy group of companies, and am based in London, England.

3. I am familiar with the invention which is the subject of the above-identified US patent application ("the invention"). I have reviewed the documents of record in the application, and in particular the Examiner's communication mailed November 3, 2009 and the cited patents Maine (US Patent 6,226,855) and Chlebowski (US Patent 4,357,745).

4. The invention is directed to applications in the offshore oil industry such as transporting hydrocarbon fluids (for example, crude oil and natural gas) and conveying treated sea water for water injection. These applications require a high level of strength and integrity, as the fluids being transported can be corrosive and high pressures and temperatures are typically involved. For example, a typical crude

oil flowline will operate at pressures in the range of atmospheric to 350 bar (5000 psi) and temperatures up to 120° (250°F). A typical water injection line would operate at 240 bars (3000 psi) at temperatures up to 60°C (140°).

5. I agree with the Examiner that Maine is relevant prior art. Maine is concerned with the same field of application as the present invention, and is subject to the same problems. Maine does disclose certain features of the claims of the present application. As noted by the Examiner, Maine does not disclose that the dimensions of the bridging member and the sequence of the method steps are such as to insure that there is a space between the material of the bridging member and the inside of the abutting ends of the conduits during at least an initial pass of the welding step.

6. The Examiner argues that this missing feature would be an obvious one to provide in view of the disclosure of Chlebowski. I believe this is not in fact the case, for the following reasons.

7. Chlebowski does not state that his disclosure is directed toward any particular field of activity. It seems to me, however, that this disclosure relates to low pressure applications where fluid containment is not a primary concern. Loss of containment of hydrocarbons is not acceptable. Injected water is normally treated with chemical addititives (biocides and oxygen scavenger) and therefore its disposal in the ocean in large quantities is not acceptable either.

8. Moreover, Chlebowski operates by using a polyurethane sleeve to form a space which, after the weld is formed, is filled with a casting resin. The sleeve 15 is simply pressed into the lining material 11, 18. Apertures 13 and 20 are provided for pouring casting resin and for venting, and these apertures are subsequently closed by plugs. This arrangement is not well suited to containing high pressures. The interface between the lining 11, 18 and the sleeve 15 is not physically sealed and casting resin into the thin annular space between the sleeve and the pipes is likely to be unreliable as to completeness. The apertures 13, 20 introduce points of weakness even when closed by screwed plugs.

9. Chlebowski himself recognises this last point. Chlebowski states at column 3 lines 19-21 that it might be necessary to strengthen these points with additional material. This is obviously an unsatisfactory and uneconomical requirement, and would lead the person in the art to consider Chlebowski's disclosure to be of no interest in high-integrity applications such as hydrocarbons. Moreover, such reinforcement implies non-uniform rigidity, and therefore undesirable strees concentrations when laying the pipe offshore.

10. In any event, the pressure within the pipe bore is, at the joint, restrained only by a thickness of polyurethane and a pair of screwed plugs. One would not expect to look to this type of arrangement to improve upon a disclosure such as Maine, where attention is given to restraining high pressures by use of a substantial metal bridging piece swaged into secure engagement with the two pipe sections.

11. I therefore believe that the person in the art would not consider combining a feature drawn from Chlebowski with the disclosure of Maine because he would not consider Chlebowski to be relevant to the field of subsea hydrocarbon flowlines.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardise the validity of the application or any patent issued thereon.

Full name of signatory: Jean-François SAINT-MARCOUX

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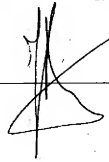
Signature:  Date: _15 February 2010

CURRICULUM VITAE

NAME:	**Jean-François Saint-Marcoux**
NATIONALITY:	French, US permanent resident
LANGUAGES:	English, French, Russian (read and spoken), Japanese (elementary)
EDUCATION:	Docteur Ingénieur Physical Oceanography, P&M Curie U., Paris 1975 MSME, California Institute of Technology, 1973 Mechanical Engineer, Ecole Centrale de Lyon, 1972
EXPERIENCE:	Over 30 years of oil and gas management engineering experience, with the last ten years devoted to deepwater and subsea work.
AFFILIATIONS:	Member: ASME-IPTI, ISOPE, SPE, and SUT, Member of OTC Programming Committee(co-chair ASME OTC) Lecturer in Field Architecture at IFP School
PUBLICATIONS:	Fifty publications on riser systems, flow assurance and field architecture, among which: - DOT 2000, through 2009 - ISOPE 2006-381, 2007-JSC-577, 2008-MWU-02/13, 2209-TPC-723 - OMAE 2003-37237, 2007-29289, Journal of OMAE Nov. 2008 - OTC 14017, 19262 - SPE 62948, 90688 Patents on: - Flowline insulation system - Temperature regulation - Method for connection and disconnection of risers - Hybrid riser towers

EMPLOYMENT HISTORY:

(Dec 2008– Present) **Acergy, (London, UK)**

Corporate Technology Development Manager

Technology Development covers Conceptual Engineering and Research and Development.

(Sep 2008– Nov 2008) **Acergy, (Houston, Texas)**

Corporate Technology Development Manager

(2005 – Aug 2008) **Acergy, (Houston, Texas)**

Group Manager Conceptual Engineering

Conceptual and FEED studies for worldwide deepwater projects:

- Chevron GOM Big Foot Riser conceptual study
- Chevron GOM Jack/St Malo Riser conceptual study
- ExxonMobil Flowline forgings study
- Total Egina Riser Base Gaslift riser conceptual design
- ExxonMobil, West Africa riser generic study
- Brazil FPSO-well connected risers and flowlines

- Total/HOE GOM Gotcha: 8000' semi-submersible connected riser system comparison and selection
- Hydro Brazil BMC7: FEED foe all flexible flowline and riser solution
- SBM West Africa FPSO-connected riser study
- Shell Malaysia Gumusut: riser study
- Shell Brazil BC-10: riser study
- BHP GOM Cascade: 8000' FPSO connected riser and flowline system
- UNOCAL Indonesia Gendalo: towing and installation feasibility of flowlines and risers

Running of the Project Expert Committee on the following projects:

- BP Angola, Greater Plutonio, Umbilicals, Risers and Flowlines
- Chevron Brazil Frade, Umbilicals, Risers and Flowlines
- ExxonMobil Angola, Block 15 Gas Gathering
- Total Angola, Pazflor SURF

(2001 - 2004) Paragon Engineering Services, Inc. (Houston, Texas)

Director – Subsea Conceptual Studies:

Develop and manage Flow Assurance group:

- ExxonMobil Erha detailed Flow Assurance analyses

Miscellaneous projects: hydrate remediation, CNG

Running of the Technical Expert Committee of Stolt Offshore on the following EPIC projects:

- ExxonMobil, Erha, Tie-Back, Risers and Export Lines
- SNEPCO, Bonga, Provision of Flowlines and Risers

(2000 - 2001) Stolt Offshore (Paris, France)

Group Manager, Conceptual Design: in charge of basic, FEED, and design competition engineering with staff in Stavanger, Norway; Nanterre, France; Aberdeen, Scotland; and Houston, Texas. Design competitions included Shell Nigeria's Bonga project and ExxonMobil Angola's Block 15 development.

(1976 - 1999) ETPM (Paris, France)

Engineering Department Manager: supervised 120 personnel on EPIC projects involving pipelines, steel structures, subsea and floating systems, and topsides.

- Girassol risers and flowlines (within AMG partnership) and Girassol FPSO (within MPG partnership)
- ExxonMobil North Nemba Jacket (7,000 T)
- Statoil Zeepipe gas trunk line, Norfra Asgard (2,000 km of 40" and 42" lines)
- Elf Angola : Cobo P1 Production Platform jacket for Elf Angola (6,000 T)

- Elf Congo: and the NKF1 wellhead production platforms for Elf Congo (7000T jacket and two 1500 T decks)

Implemented: 3D-CAD, hydrodynamics calculation software (MOSES, FLEXCOM, and ORCAFLEX), SYSTUS 3D thermal analysis software, ISO 9001 certification, and technical document database and retrieval system.

Member of the Technical Expert Committee for the Girassol risers and flowlines and ad-hoc committee on thermal issues.

Manager, Topsides Facilities: responsible for time and equipment cost estimation for tenders; engineering, procurement, fabrication, and hook-up/precommissioning; selection and/or supply of management/supervision team for fabrication of deck modules and offshore hook-up/precommissioning work; and planning/scheduling and development of associated computer software. Main projects included:

- Elf Angola Cobo & Pacassa drilling platforms,
- Elf Nigeria Afia Odudu Production Complex for Elf Nigeria (100,000 BOPD)
- IOOC Iran Rehabilitation of NASR production complex for (80 000 BOPD),
- CABGOC NAMBA and NUMBI production platforms
- DPC, revamp of Fateh Field K2 platform for DPC
- ONGC KVX wellhead platforms for ONGC
- Petroland L4B and L7A wellhead platforms.

Project Engineer for Shell Sarawak Behrad's F23 project: responsible for hook-up and testing preparation.

Project Engineer for Gulf Zaire's Mibale gas compression platform: overseeing of engineering and procurement services at CREST (Tulsa, Oklahoma), and construction of gas compression modules by C.E. NATCO (Gulfport, Mississippi). Responsible for hook-up and shutdown operations on-site (50 MMSCFD of gas and 40,000 BOPD)

Project Engineer for Total ABK 50 MMSCFD gas lift: responsible engineering and procurement services for topsides, jacket, sealines.

Specialist Engineer:

- Troubleshooting Umm Shaif Water Injection Modules 6 and 7 for ADMA OPCO (100,000 BWPD each).
- Supervised Technip's detailed engineering for a six-pile production platform (40,000 BPD) and six drilling platforms for the Sirri Field Development.

(1974 - 1976) Cameron Iron Works (Beziers, France)

Wellhead Engineer: responsible for wellhead component engineering group, which designed wellhead and Xmas tree components. Development of 10 000 psi gate valves to API 6A.

(1973 - 1974) **Laboratory of Physical Oceanography, Natural History Museum (Paris, France)**
Researcher: development of a computer forecast software of the thermal structures in the open ocean. This thermocline computer model, was used in 1999 by the European Space Agency.

(1973) **Jet Propulsion Center – California Institute of Technology (Pasadena, CA)**
Research Assistant: heat exchange in stratified media.